

## CLAIMS

1           1.       A nutritional supplement comprising at least two components  
2 administered in effective daily dosages selected from the group consisting of:  
3           25-2500 mg +/- alpha-lipoic acid,  
4           50-7500 mg acetyl-L-carnitine,  
5           25-2500 mg resveratrol;  
6           100-5000 mg lecithin; and  
7           30-6000 mg N-acetyl cysteine with the proviso that the composition  
8 lipoic acid and the acetyl-L-carnitine are not administered together.

1           2.       The composition of claim 1 and further comprising a carrier for  
2 said components.

1           3.       The composition of claim 1 wherein said lipoic acid comprises  
2 alpha-lipoic acid.

1           4.       The composition of claim 2 wherein said carrier comprises a  
2 liquid.

1           5.       The composition of claim 2 wherein said carrier is selected from  
2 the group consisting of: a capsule, a transdermal patch, an injectable solution,  
3 an intranasal aerosol and a suppository.

1           6.     The composition of claim 2 wherein said carrier comprises a  
2     tablet.

1           7.     The composition of claim 1 wherein said composition comprises  
2     at least one mitochondrial metabolite or promoter thereof selected from the  
3     group consisting of 25-2500 mg of lipoic acid, 50-7000 mg acetyl-L-carnitine,  
4     30-6000 mg N-acetyl cysteine, and 40-1000 mg resveratrol.

1           8.     The composition of claim 1 wherein said composition comprises  
2     at least one mitochondrial metabolite or promoter thereof selected from the  
3     group consisting of 25-2500 mg of lipoic acid, 50-7000 mg acetyl-L-carnitine,  
4     30-6000 mg N-acetyl cysteine, and 150-3000 mg lecithin.

1           9.     The composition of claim 6 wherein said lecithin is present from  
2     100-5000 mg.

1           10.    The composition of claim 7 wherein said resveratrol is present  
2     from 45-1000 mg.

1           11.    A nutritional supplement comprising at least two components  
2     administered in effective daily dosages selected from the group consisting of:  
3                600-3000 mg +/- alpha-lipoic acid,  
4                250-2000 mg acetyl-L-carnitine,

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5           45-1000 mg resveratrol;  
6           200-2000 mg lecithin; and  
7           100-750 mg N-acetyl cysteine with the proviso that the composition  
8           lipoic acid and the acetyl-L-carnitine are not administered together.

1           12.   The composition of claim 10 and further comprising a carrier  
2           for said components.

1           13.   The composition of claim 10 wherein said lipoic acid comprises  
2           alpha-lipoic acid.

1           14.   The composition of claim 11 wherein said carrier comprises a  
2           liquid.

1           15.   The composition of claim 11 wherein said carrier comprises a  
2           tablet.

1           16.   The composition of claim 10 wherein said composition  
2           comprises at least one mitochondrial metabolite or promoter thereof selected  
3           from the group consisting of 600-3000 mg of lipoic acid, 250-2000 mg acetyl-  
4           L-carnitine, 100-750 mg N-acetyl cysteine, and 40-1000 mg resveratrol.

1           17. The composition of claim 10 wherein said composition  
2 comprises at least one mitochondrial metabolite or promoter thereof selected  
3 from the group consisting of 600-3000 mg of lipoic acid, 250-2000 mg acetyl-  
4 L-carnitine, 100-7500 mg N-acetyl cysteine, and 150-3000 mg lecithin.

1           18. The composition of claim 15 wherein said lecithin is present  
2 from 200-2000 mg.

1           19. The composition of claim 16 wherein said resveratrol is present  
2 from 45-1000 mg.

1           20. The method of promoting cognitive or auditory function, said  
2 method comprising the step of:  
3           administering to said cells a composition comprising at least two  
4 components in synergistic effective amounts at least two components selected  
5 from the group consisting of:  
6           25-2500 mg +/- alpha-lipoic acid,  
7           50-7500 mg acetyl-L-carnitine,  
8           25-2500 mg resveratrol;  
9           100-5000 mg lecithin; and  
10          30-6000 mg N-acetyl cysteine with the proviso that the composition  
11 lipoic acid and the acetyl-L-carnitine are not administered together.

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- 1                    21.    The method of claim 19 wherein said step of administering
- 2                    occurs daily.